

James Curry-Castillo

New Bodies in the Dolphin Encounter

This article examines the recent media coverage and scientific work on the field of dolphin communication, specifically of the work of Dr. Denise Herzing and the Wild Dolphin Foundation, and analyzes the interaction between human and dolphin in the biotechnical search for language translation.

Preface.

This essay was written as the final paper for Courtney Handman's course "Translation and the Boundaries of Difference," which I took during my junior year as an anthropology major at Reed College, in 2015. The essay responds directly to some of the reportage of what was, at the time, an extremely recent development in the scientific study of dolphin communication. This paper was my first foray into what would later become the topic of my senior thesis.

Introduction : the Dolphin Event.

We are apparently in the middle of an important moment for dolphin communication. Today, on the cover of the most recent issue of *National Geographic*, is the image of a bottlenose dolphin swimming towards the reader, with what looks like a crooked smile on its face (figure 1). The title: "**Thinking Like A Dolphin**: Understanding One of the Smartest Creatures on Earth". Elsewhere, a series of headlines sensationally point towards the same event: "Dolphin whistle instantly translated by computer," "Dolphin whistle translated by computer for the first time—and it said SEAWEED," "Did that

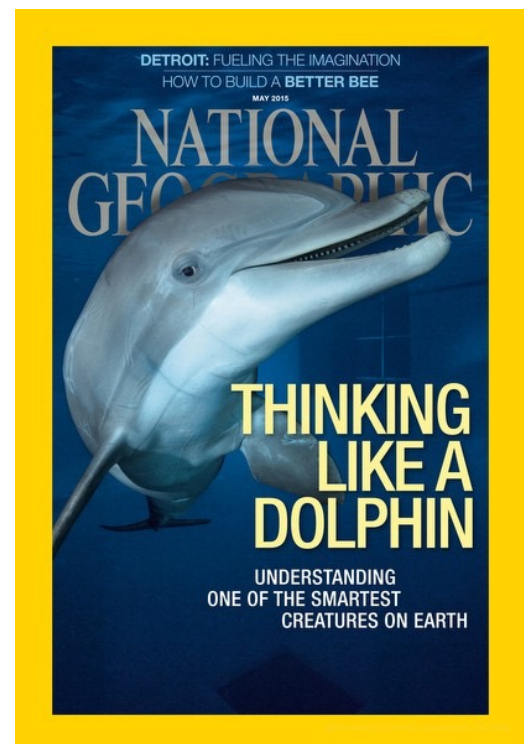


Figure 1: Cover of the May 2015 issue of *National Geographic*.

dolphin just say seaweed?”, “Did a Dolphin Really Say ‘Sargassum?’” (*New Scientist*, *The Daily Mail*, *The Washington Post*, and *Discovery News*).

What has occurred? By most accounts it may seem as if humans have miraculously begun contact with an extremely radical Other, which Joshua Foer, the author of the *National Geographic* article, describes as “a kind of alien intelligence sharing our planet,” a being who “may be the closest we’ll come to encountering ET” (51). But taken at face value, this narrative is somewhat impossible to believe. Of the headlines I listed, the final one speaks to such unbelievability, expressing skepticism. It asks: did a dolphin *really* speak?

The aim of this essay is not to answer this question, but rather to explore a pair of parallel concerns: 1) What, exactly, has just occurred in the field of dolphin communication? and 2) What sort of labor had to be done to make such an event possible? These two questions must be answered together if we are to make sense of what has happened, because the event is not legible without an attention both the theoretical and material assemblages that have allowed it to emerge. In order to limit my scope, I will focus specifically on the use of the Cetacean Hearing and Telemetry machine (CHAT), which the dolphin communication scientist Denise Herzing describes specifically as *not* a “translator” but rather a “human/dolphin interface or acoustic keyboard” (Wild Dolphin Project 2015). In particular this paper will explore the ways in which the CHAT figures language as a *technology*, as well as the ways such a figuration may affect the nature of translation and of communication itself.

The C.H.A.T. Interface.

On March 31, 2014, Dr. Denise Herzing published a blog post to the Wild Dolphin Project website titled *CHAT: Is It A Dolphin Translator Or An Interface?* Throughout the post she

explains the workings of the technology being used to establish communication with wild spotted dolphins. The basic description reads:

CHAT (Cetacean Hearing and Telemetry) is an underwater computer designed by Dr. Thad Starner and his team at Georgia Tech. CHAT receives sounds via two hydrophones, and produces sounds through an underwater speaker. The Wild Dolphin Project, under the direction of Dr. Denise Herzing and with the help of colleagues Dr. Adam Pack and Dr. Fabienne Delfour, created a few basic artificial sounds, specifically whistles (outside of the dolphins' natural repertoire) to label a few play objects (Sargassum - a natural play toy, scarf, and rope - toys that humans bring in the water) (Wild Dolphin Project 2015).

When news outlets claim that a dolphin said the word “sargassum,” they are not referring to an event in which humans translated a term that was indigenous to the dolphin. What actually occurred:

As it happened in August I was in the water when I heard the “word” sargassum in my bone-conducting headphone, meaning essentially that the computer system heard and recognized the incoming whistle for sargassum and was triggered to say the word “sargassum” in my ear (Wild Dolphin Project).

Herzing puts quotes around “word” because the signal that the CHAT registered was in fact a dolphin whistle mimicking a sound designed by the scientists meant to refer to the object of “sargassum.” The scientists are fairly certain that a dolphin indeed vocalized this sound, but Herzing is quick to add:

...this is not to say that a dolphin knew what it was saying when it put out this whistle. It may simply be that the dolphin was mimicking this whistle or that the computer heard a close approximation to “sargassum” and triggered (Wild Dolphin Project).

The problem of whether or not the dolphin “knew what it was saying” is an important one, and one I will explore more directly soon; for now, suffice it to say that this problem highlights the way in which dolphin research is largely concerned with the subjective interiority—or, in strictly scientific terms, the “cognition”—of dolphins.

Despite the caveats just listed, Herzing reports that the event “was both exciting and confirmatory” (Wild Dolphin Project 2015). Herzing concludes by pointing towards the direction future experiments could take:

Through the summer we had other whistles that “sounded” by ear that they were mimics but did not trigger the computer for a match. But as we reviewed the data this winter, it appeared that many whistles did look like mimics but were placed, by the dolphins, in a higher frequency range, one that the system was not designed to hear (dolphins have been known to jump octaves or adjust for background noise). So, as we approach the summer of 2015 our priority is to increase “our” hearing range via the computer, and spend more time in the water exposing the dolphins to a few of these signals and see what they might do (Wild Dolphin Project).

Important here is the fact of sound frequency, a material characteristic of the dolphin whistle that requires an adjustment of the communication apparatus. Some labor must now be mobilized to make the CHAT capable of the basic task of being able to register these higher frequency dolphin whistles as audible sounds.

Prosthesis.

The CHAT functions as a prosthesis, extending the capabilities of both dolphin and human bodies beyond their limits. Prostheses are commonly understood to be devices that in one way or another replace something that is missing. What the CHAT replaces in both the human

and the dolphin is double: 1) the organ for communication with the other (human mouths cannot produce dolphin sounds, and vice versa, so the CHAT performs both of these functions), and 2) a common language between dolphins and humans.

As the use of a prosthesis, the use of the CHAT leads to the emergence of an assemblage we can describe as a *new cyborg*. This new cyborg that emerges from the assemblage of humans and the CHAT machine is quite similar to the “submarine cyborg” that the anthropologist Stefan Helmreich describes in his ethnographic study of the *Alvin*, a three-person submersible operated by the Woods Hole Oceanographic Institution. Both this submarine and the CHAT translate sound from the water for typically land-dwelling human ears. This translation is in both cases one that not only transforms a sound into another sound—the submarine creating “echoing sounds” from transponder signals (Helmreich 2007: 625), the CHAT creating English speech from dolphin whistles—but that, in so doing, transforms an unintelligible signal into a meaningful sign. As Helmreich writes, the body that uses such a machine is “threaded into a media ecology of communication and control, networked into a semiotic order that extends, modulates, and conditions [its] senses” (622). The human body is here experiencing two transformations: the first, a conceptual transformation of the body into a *semiotic system*; and second, an extension of the boundaries of this semiotic system. This means that the body, as a system that *senses phenomena* and then *interprets meaning*, has extended itself to include a new technology (e.g. the submarine, the CHAT) within its boundaries.

It is not only the human that here becomes a new cyborg, but the dolphin as well. By interfacing with the CHAT, the dolphin undergoes the process of incorporating a foreign

prosthesis and thus changing into a different biotechnical entity. Such a claim is only possible if we accept John Weightman's idea that language itself is a prosthesis:

Language is peculiar in that it functions *as if* it were an inborn part of the body. Although it came to us originally from without, it is experienced as being inherent, just as the owner of a well-fitting set of dentures may chomp happily away, completely forgetting that his teeth are not his own. How many of us, when talking, remember that the words we are uttering are not our personal property? For this reason, I would suggest as a preliminary definition: language is a necessary and unique collective prosthesis (Weightman 55).

The foreign prosthesis that the dolphin incorporates is then that of the common dolphin-human language fabricated by the scientists of the Wild Dolphin Project. The idea here is that if the dolphin understood what it was "saying" when it made the whistle for "sargassum"—a word/sound developed by the scientists—then it has taken a small step towards developing a new interiority, one defined in terms of communication with the human other.

The possibility that dolphins may end up speaking a language developed by humans raises questions about the relationship that may thus become established between dolphins and humans. The politics of such an outcome are complicated, and necessarily so, since as Donna Haraway argues, among the relations between companion species there is "no easy unity to be found" (Haraway 2008: 41). But is the relationship between dolphins and humans one of companionship? Or is it threatening to become one of colonization? Is the linguistic prosthesis here introduced by the scientists one that refashions the subjectivity of dolphins to be more like that of humans? Or does the human become more dolphin-like as well?

The significance of Weightman's argument is the idea that language is *always* a prosthesis, and that by their use of language, subjects are always manipulating and being manipulated by a technology that is both interior and foreign to them. So it is not that the CHAT creates cyborgs

where there were previously purely natural biological entities, but rather precisely that it creates *new* cyborgs different from the cyborgs that came before. Remaining agnostic regarding the existence of an indigenous *dolphin* language, I argue that *humans* are always already cyborgs at least insofar as they are linguistic subjects. The same may hold true for dolphins, and this formulation of course focuses on the relationship between the technology of language and an embodied subjectivity, saying nothing of the effects any other technologies, tools, or objects may have on the cultivation of a human or a dolphin subject.

The cyborg ontology is one that raises questions about one's provenance and belonging. What am I? I am a cyborg, one of Donna Haraway's "chimeras," those "theorized and fabricated hybrids of machine and organism" (Haraway 2008). Where did these mechanical and organic components of my being originate from? They did not originate from myself, that much is sure. But if I *originated* from others, do I *belong* to them as well? Donna Haraway's cyborg is not so submissive:

The main trouble with cyborgs, of course, is that they are the illegitimate offspring of militarism and patriarchal capitalism, not to mention state socialism. But illegitimate offspring are often exceedingly unfaithful to their origins. Their fathers, after all, are inessential (ibid).

Haraway is here speaking specifically in the political context of Socialist-Feminism, but the words resonate within any of the various political relations that exist between the technological, the social, and the ontological. It may be the case that I originate from others, but this still leaves open the question of whether or not those others remain dominant over me.

The question is just as open for the relationship between humans and dolphins. What is at stake here is not simply the translation of signs into other signs but rather the transformation of

subjectivities into other subjectivities. The question still remains, however: *who* is being transformed into *what*? The answer is hardly ever clear when it is about a translation between human languages. The question becomes even more complicated when dolphins enter the mix. In this paper, I seek to better demonstrate the shape of the question by exploring some of the valences of the rhetoric surrounding the project to communicate with dolphins.

Other Worlds.

Prominently displayed on the front page of the website for the Wild Dolphin Project is the following slogan:

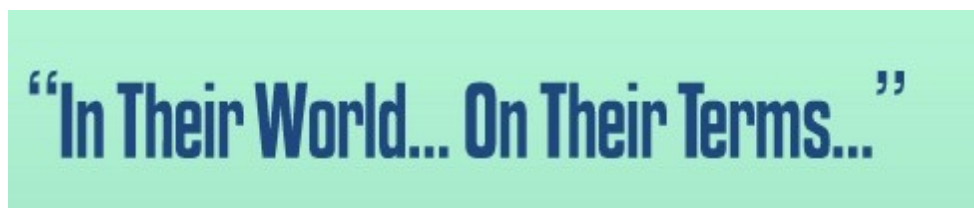


Figure 2: Slogan from wilddolphinproject.org, accessed May 2015.

What a provocative phrase! Its meaning is not immediately explicated on the page, but as one pokes around the website one begins to get a sense at what is being said. On the “Mission and Vision” page of the website, we find the following list in a section titled “Strategies and Principles”:

- Non-invasive research builds a trust between the research team and dolphin pod, which allows data to be captured in the most natural setting.
- Underwater observation provides an inclusive approach to analyze behavior, genetics, associations, cognition, and geography; along with, a reliable photo-identification tracking system.
- Preserving the natural environment gives long-term viability to all life-forms.
- Education provides a tool in which all can make informed decisions and appropriate actions.
- “IN THEIR WORLD, ON THEIR TERMS”

Certain terms and phrases stand out here: *trust, the most natural setting, behavior, cognition, all life-forms*, and of course, “*IN THEIR WORLD, ON THEIR TERMS.*”

What all these words point to is a focus on the interiority of dolphins and an attention to the possible differences and similarities this interiority may have with that of humans. In the 2015 *National Geographic* article, Joshua Foer writes that dolphin scientists “are more interested in how the dolphins think than in what they can do” (35). It is perhaps intuitive yet still noteworthy that a scientific project about communication ends up also being largely about interiority. John Durham Peters notes, in his history of the idea of communication:

Although speech, as Aristotle thought, is perhaps a capacity distinct to the human species, ‘communication’ is not...Communication is something we share with animals and computers.... (Peters 1999: 227).

This is to say that a study on communication, particularly on communication with and between non-humans, does not *necessarily* have to posit any theory about the interiority of those non-humans. Still, this study *does* posit such a theory. Why?

One commonly repeated factoid about dolphins is that they are among the most intelligent species on the planet. This is the main reason given as to why dolphins may have a complex interiority at all. The exact form of this interiority, however, remains mysterious. As Foer writes:

...what is intelligence really? When pressed, we often have to admit that we’re measuring how similar a species is to us. [Comparative psychologist Stan Kucjaz] thinks that’s a mistake. “The question is not how smart are dolphins, but how *are* dolphins smart?

Thus the task of understanding this non-human other is figured in terms of difference from—and as such in terms of a comparison to—a human subjectivity.

This difference is understood by scientists mostly through a study of the body of the dolphin. The article in *National Geographic* includes a foldout that richly visualizes the sensory apparatuses of dolphins and humans, complete with illustrated X-rays of dolphin and human heads and the organs inside of them. In the image for the human brain, an arrow points into the ear. Out of the ear radiate circles of dashed lines meant to represent sound waves that are then perceived by the human ear as well as the auditory nerve that attaches this ear to the brain.

The dolphin image is a bit more complex; rather than a single arrow entering the dolphin head, there are two, one going in and one going out. Already a fundamental difference between the auditory senses of human *hearing* and dolphin *echolocation* is legible. The illustration of the latter begins with arrows coming out of a fatty tissue in the dolphin head called the “melon” which the dolphin uses to beam the sound of clicks it produces in structures called “phonic lips.” This sound is illustrated to radiate outward in an arrow labeled “Focused amplified sound,” which bounces off of a fish. From the surface of this fish a second arrow labeled “Echo returns” flies back to the dolphin, entering the auditory nerve, which attaches to the dolphin brain.

For all the difference that is here figured, however, a fundamental similarity between humans and dolphins is demonstrated, and that is the possession of a brain. Indeed, the opposite page, titled “A Mind of Their Own,” presents the following passage:

Since the ancestors of dolphins left their fellow mammals behind and entered the water more than 50 million years ago, humans and dolphins have evolved radically different bodies adapted to wholly separate environments. But we share one notable piece of anatomy—a large, complicated brain. Among the challenges to our own big brains: penetrating the mystery of how dolphins use theirs (National Geographic 2015).

This figuration of the difference and similarity between humans and dolphins is resonant with the cosmology described by Eduardo Viveiros de Castro in his essay about Amerindian perspectivism and perspectival anthropology:

This cosmology imagines a universe peopled by different types of subjective agencies, human as well as nonhuman, *each endowed with the same generic type of soul, that is, the same set of cognitive and volitional capacities*. The possession of a similar soul implies the possession of similar concepts, which determine that all subjects see things in the same way. ... What changes when passing from one species of subject to another is the ‘objective correlative,’ the referent of these concepts: what jaguars see as ‘manioc beer’ (the proper drink of people, jaguar-type or otherwise), humans see as ‘blood.’ ... *Such difference of perspective—not a plurality of views of a single world, but a single view of different worlds—cannot derive from the soul, since the latter is the common original ground of being. Rather, such difference is located in the bodily differences between species*, for the body and its affections (in Spinoza’s sense, the body’s capacities to affect and be affected by other bodies) is the site and instrument of ontological differentiation and referential disjunction (2005: 6, italics mine).

The phrases I highlighted are particularly striking in their resonance with dolphin research. For scientists, the “same set of cognitive and volitional capacities” is referred to not as the *soul* but as the *brain*. Dolphin and human brains are indeed thought to be generically the same, differentiated from that of humans in terms of the way it is affected by the entirety of the animal’s embodiment. Dolphin research is also surprisingly similar to Amerindian perspectivism in the way it posits the existence of multiple worlds. This is a strange move for a natural science to take, which typically works on the assumption of a single continuous Nature within which all phenomena exist. Dolphin research does not really contradict this assumption; it does, however, make room in this Nature for multiple worlds, and it does so in a rather extreme and

straightforward manner. When speaking of dolphins and humans, we are speaking of two species that literally inhabit two radically different environments: one lives in the ocean, and the other one lives on the land. The bodies of the two species are figured as mediations of their worlds, shaped by those worlds via evolution and expressive of those worlds by their “capacities to affect and be affected.” Ultimately, the point is not that the dolphin scientists subscribe to the same cosmology as Amerindian Perspectivists, but that their approach to communication is based on similar theoretical grounds.

These theoretical grounds are ones that emphasize the role of embodiment and affect in communication. In theory, the scientists are attempting to understand the dolphins on “their terms.” In practice, this means transforming the affective capacities of both human and dolphin bodies through the intervention of a pair of prostheses, the CHAT machine and the common language between humans and dolphins. In transforming their affective capacities, the dolphin scientists are in a real sense attempting to create *new bodies*. In trying to create new bodies, they are also trying to create a new world, one shared by humans and dolphins as speaking subjects.

Conclusion.

In this essay I have left out a lot of relevant information that could help to make sense of scientists’ recent encounters with dolphins. In particular, I have neglected to expose the historical roots that both dolphin research and cyborg theories share in the world of cybernetics (particularly in the figures of Gregory Bateson, Donna Haraway, and Norbert Weiner). I have also neglected to embed this moment in a larger history of communication itself, which extends past the modern era into antiquity.

I believe such historical contextualization would be useful for the study of this moment because it helps to de-sensationalize what otherwise seems entirely like an extreme rupture with the past. This is not to say that there is nothing new about what is happening. Surely the emergence of a common language between humans and dolphins *would* be a revolutionary development, but if such an even occurs, it will have been in large part because of a long intellectual and political history that existed prior to the work of the scientists in the Wild Dolphin Project. What I hope I have achieved in this paper is to have emphasized the peculiar ontologies that both motivate and emerge from the biotechnical labor done in the contemporary field of dolphin communication. These ontologies are new, but not radically so. Indeed, what is occurring in the field of dolphin communication is new, but it has its precedents.

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